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Crabapples in the Landscape

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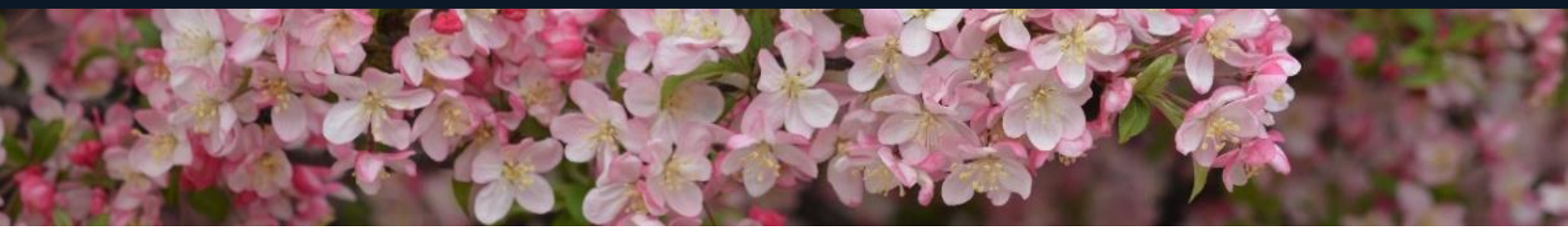

Introduction

Crabapples (*Malus sp.*) are native to Kazakhstan and North America. Crabapples are ornamentals that are closely related to common apple trees and are distinguished by fruit size. Technically, any apple fruit that is smaller than 2-inches is considered to be a crabapple. There are approximately 1,000 different varieties of crabapples, with about 100 of these being commonly planted. Crabapples are an excellent addition to Utah landscapes as they are considered to be drought tolerant, low maintenance, and versatile trees. They withstand low winter temperatures and the hot dry conditions common in Utah summers. Trees come in many shapes and sizes. Mature tree size can vary from small (10' high x 10' wide) to medium (25' high x 25' wide). Tree shape can range from upright, columnar, rounded, semi-weeping, or spreading.

Fig. 1. *The double blooms of Klems Betchel provide a delicate and beautiful focal point in the spring garden.*

Crabapples are an excellent addition to the landscape where space is limited, such as under power lines. Trees bloom profusely in the spring and flowers can be fragrant, making them a better selection for the landscape than flowering plums. Fall foliage is bright and colorful and is often followed by brightly colored fruits that provide a food source for birds in late fall and early winter. Drawbacks to crabapples include root suckering and messy fruit in the early spring.

Recommended Cultivars

There are many factors to consider when selecting a crabapple for your garden, including bloom color, fall foliage color, fruit size, tree size, and disease resistance. Crabapples are members of the Rose family (Rosacea), which makes them susceptible to Fire blight, a bacterial disease that is spread during warm, wet springs during bloom. There are several cultivars that provide some resistance to Fire blight and should be considered when selecting a tree for your landscape (Table 1).

Trees are budded or grafted onto rootstocks to control characteristics such as size, pest resistance, and tolerance of soil conditions. Commonly used rootstocks for grafting include Red Sentinel (*Malus* x *robusta*), Siebold's Crabapple (*Malus sieboldii*), and Siberian Crabapple (*Malus baccata*). New "SproutFree" rootstocks have been propagated by Carlton Nursery and may reduce or eliminate the incidence of suckering.

Table 1. *A selection of recommended crabapple cultivars for Utah.*

CULTIVAR	MATURE TREE SIZE		CANOPY SHAPE	BLOOM COLOR	FALL COLOR	FRUIT *PERSISTENT	FIRE BLIGHT RESISTANCE
	H	W					
Adams *Malus* 'Adams'	20'	20'	Rounded	Pink	Yellow	5/8" Red*	Excellent
Cardinal *Malus* 'Cardinal'	16'	22'	Spreading	Deep pink to red	Yellow-orange	1/2" Red	Good
Centurion *Malus* x 'Centzan'	25'	20'	Oval	Red	Orange	3/8" Red	Good
Cinderella *Malus* x 'Cinzam'	8'	4'	Oval	White	Orange-red	1/4" Yellow*	Excellent
Coralburst *Malus* 'Coralcole'	15'	15'	Rounded	Coral pink	Yellow	1/2" Yellow-green	Excellent
Dolgo *Malus* 'Dolgo'	30'	25'	Rounded	White	Yellow	1 1/2" Red	Good
Firebird *Malus sargentii*	8'	10'	Rounded	White	Yellow	3/8" Red*	Excellent
Guinevere *Malus* 'Guinzam'	10'	10'	Rounded	Pink to white	Orange-yellow	3/8" Red*	Good
Lollipop *Malus* 'Lollizam'	10'	10'	Rounded	White	Yellow	1/8" Red	Good
Louisa *Malus* 'Louisa'	10'	12'	Weeping	Pink	Yellow-orange	3/8' Yellow	Good
Prairifire *Malus* 'Prarifire'	20'	20'	Rounded	Bright pink to red	Orange	1/2" Red*	Good
Prairie Rose *Malus ioensis*	20'	18'	Rounded	Deep pink	Maroon	Fruitless	Fair
Profusion *Malus* 'Profusion'	20'	20'	Upright	Deep pink	Amber	1/2" Maroon*	Good
Purple Prince *Malus* 'Purple Prince'	20'	20'	Rounded	Rose red	Yellow	1/2" Maroon	Good
Radiant *Malus* 'Radiant'	25'	20'	Rounded	Deep pink	Orange	1/2" Red	Excellent
Red Barron *Malus* 'Red Barron'	18'	8'	Columnar	Dark red	Orange	1/2" Red	Good
Robinson *Malus* 'Robinson'	25'	25'	Rounded	Deep pink	Orange	3/8" Red*	Good
Sargent Tina *Malus sargentii* 'Tina'	5'	6'	Rounded	White	Yellow	1/4" Red	Good
Spring Snow *Malus* 'Spring Snow'	25'	22'	Oval	White	Yellow	Fruitless	Good
Zumi Calocarpa *Malus* × *zumi* 'Caloarpa'	20'	24'	Spreading	White	Yellow	3/8" Red*	Excellent

How to Grow

SITE SELECTION

Crabapples flower and fruit best in full sun and should be planted where they will not be excessively shaded by other trees. Choose a site that receives at least 8 full hours of sun per day. Trees planted on the south or west side of buildings and slopes may bloom earlier. If crabapples are being grown for fruit, early bloom can make fruit more susceptible to frost damage caused by late spring freezes. Crabapples prefer loamy, well-draining soil, but can be grown in heavy clay soils when amended with the addition of organic matter and not overwatered. Crabapples are truly a tough tree and will grow where sensitive trees, such as Japanese Maple, may fail. Avoid planting trees in lawn as trees may struggle due to differences in water and nutrition requirements.

SITE PREPARATION

Taking the time to properly prepare the planting site is important as the tree will occupy the site for many years. Controlling perennial weeds, such as field bindweed, before planting is easier than attempting to control weeds after planting. A soil test may be beneficial to determine your soil texture, pH, salinity, organic matter and nutrient content prior to planting. Soils can be amended with nutrients to support healthy tree growth based on soil test results. For more information on soil testing, visit the USU Analytical Laboratory.

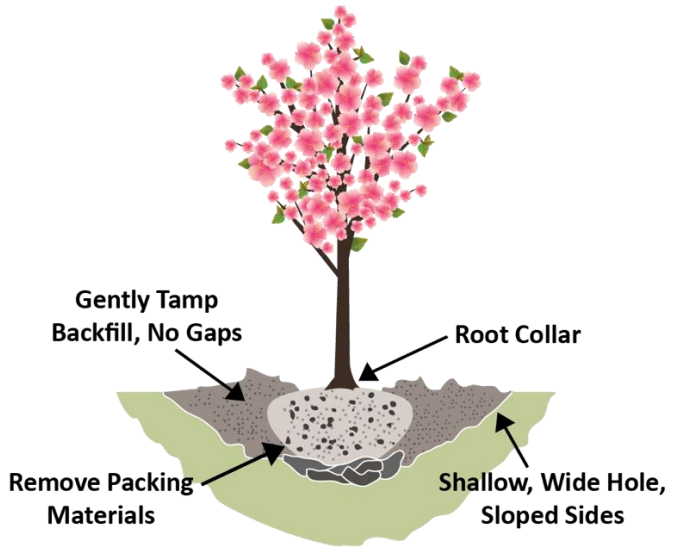

Fig. 2. *Proper planting of trees in the landscape is important to maintain the health of the tree.*

PLANTING AND SPACING

Trees should be planted in early spring or fall when temperatures are mild. If trees are planted in the summer months, careful attention should be given to irrigation to minimize stress to the tree. Planting holes should be dug to accommodate the size of the root ball, with the hole 2 or 3 times wider than the width of the root ball (Fig. 2). Place the tree gently in the hole, being careful not to damage the roots and trunk. The tree should be planted so that the flare of the root collar is exposed and planted at or above the level of the ground. Take caution to not plant the tree too deep. If the tree is grafted, be careful not to cover the graft union with soil. Trees that are planted too deep will struggle to survive and may grow suckers at the base more readily. Backfill the hole with soil and immediately water the tree. Trees should be placed with the mature tree size in mind.

Fig. 3. *Crabapples such as 'Spring Snow' are attractive in the landscape year round and require minimal irrigation.*

IRRIGATION

Newly planted trees should be watered to promote root growth and water uptake to support the canopy. Apply water so that the soil is thoroughly wet to a depth of about 12-inches during initial establishment. Watering frequency may need to be adjusted based on soil type. Sandy and loamy soils may require water every 2-4 days, where heavy clay soils will need to be watered less frequently. Crabapples are very drought tolerant once they are established requiring only 0.3 to 0.4 inch of water weekly. Planting crabapples in turf grass will supply them with more water and nutrients than are generally needed, which often results in higher incidence of disease. When trees are planted in lawn, turf should be kept 3 to 4 feet away from the trunk circumferentially.

WEED CONTROL

Weeds and turf under the canopy of the tree can compete with the tree for soil moisture and nutrients and also increases the incidence of physical damage to the trunk by string trimmers and lawn mowers. Avoid tilling under tree canopies as a method of weed control. The majority of tree roots are at or near the soil surface where they are easily damaged by mechanical tilling. Mulches can be applied around the base of the tree to suppress weed growth. Hand pulling, hoeing, or shallow hand cultivation are ideal methods for weed removal. When applying herbicides, caution should be taken to avoid application to tree trunks or associated suckers.

FERTILIZATION

If trees appear to be struggling, leaves are small, and growth is less than 5 inches per year, a soil test can be conducted to determine if additional nutrition is needed.

PRUNING

Crabapples generally require minimal pruning after the general structure has been established during the early years of the tree's life. Pruning should be done in early spring when trees are dormant. This reduces the incidence of disease and makes visualization of the canopy easier. Dead, diseased, or crossing branches should be removed from the canopy. It is common for suckers to form at the base of the tree. Sucker growth should be removed annually, cutting them as close to the roots as possible. Suckers that are not pruned out can become quite large and may even flower, although the flowers are likely to be another color. Watersprouts are aggressive shoots that grow vertically in the canopy. These should also be removed annually to promote good light penetration into the canopy to support flower bud formation.

Fig. 4. *Trees require little pruning as they typically establish a good canopy shape when they are relatively young, such as in the 'Radiant' crabapple pictured.*

PESTS AND DISEASE

Crabapples are subject to many of the same pests and diseases found in common apples. Fire blight, Powdery mildew, aphids, and apple borer are some of the more common problems. Guidelines for home owners are available from your local USU Extension Agent. Additionally, you can sign up for fruit tree pest advisories at the USU Pest Advisories website.

Table 2. *Common pests and diseases.*

DISEASE	IDENTIFICATION	CONTROL
Fire Blight	Bacterial disease that results in blackened leaves and fruit. Affected shoots may appear like a shepherd's crook and fruits can become mummified. Cankers or sunken, discolored areas can occur on branches and the trunk as well as oozing.	Choose resistant cultivars (see Table 1) that are less susceptible to the disease. Prune out infections and overwintering cankers 12" below symptoms. For control options see the USU Fire Blight Fact Sheet.
Powdery Mildew	Fungal disease that is common in Utah and affects new vegetative growth. Leaves can appear malformed and become coated with a white, powdery mass of spores.	Early spring applications of fungicide are recommended. Sprays should begin before bloom and should be reapplied according to fungicide label directions. For specific control options see the Pacific Northwest Management Handbook.

DISEASE	IDENTIFICATION	CONTROL
Aphids	Small, soft-bodied insects that will pierce and suck the sap out of young, tender growth. Insects often cluster in colonies. Symptoms include curled and yellowed leaves, sticky honeydew, blackish gray mold, and deformed fruit.	Insecticides can be effective; however, repeated application can result in resistance. Once leaves have curled, control can be difficult as the aphids are partially protected by the leaves. For specific control options see the Pacific Northwest Management Handbook recommendations on aphids.
Flatheaded Apple-tree Borer	Flatheaded borers are beetles that can attack and kill crabapples. Insects may be an indication of other problems as they typically target stressed trees. Small D-shaped exit holes and sawdust-like frass will be seen in and around the trunk of the tree. Tree may have loose, flaking bark and dead limbs.	Proper maintenance of trees to promote healthy growth and prevent stress will reduce the incidence of borers. Trunk sprays should be applied in summer months (June and July) to prevent larvae from entering trees. Products containing permethrin and carbaryl are effective in treating larvae.
Spider Mites	Spider mites are more closely related to spiders than insects and overwinter at the base of the tree. Scorched and stippled leaves are common symptoms. Fine silk webbing may be observed when populations are high.	Predatory mites will feed on spider mites, providing some level of biological control as long as their populations are in high enough numbers. Using a stiff stream of water to wash down trees can be effective in reducing populations. Application of 1% horticultural mineral oil or an insecticidal soap every 5-7 days when temperatures are cool may also be effective.

Fig. 5. *Fire blight is a common and devastating bacterial disease that affects apples. Shepherd's crooking at the tips of shoots, blackened leaves, and amber ooze are symptoms of Fire blight.*

Harvest, Storage and Use

Crabapples ripen in late summer and early fall depending on variety and local climate. It can be difficult to distinguish when crabapples are ripe as they do not typically develop the level of sweetness that common apples do. Indicators of ripeness include:

- Darkened seeds. Light colored seeds usually indicate immaturity.
- Intensified fruit color.
- Fruit firmness. Fruits should be firm and crisp and easily edible. If fruits are too hard to take a bite out of, they likely are not ripe.
- Fruits should be easy to remove from the tree.
- Healthy crabapples dropping from the tree around the time that they should ripen.

Fruits can store from several days to several weeks depending on the cultivar. Fruits will store longer if placed in a sealed container in the refrigerator. Crabapples also freeze well. Fruits are often tart and lack sweetness, which make them excellent for processing into jams and jellies or pressing into cider.

Fig. 6. *Persistent fruit on crab apples is attractive and provides a food source for birds during winter months.*

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